



Nov. 15, 2003, VOLUME IV NUMBER XXII

SERVING THE REGION'S INDO-AMERICAN COMMUNITY

# Fire destroys family's home

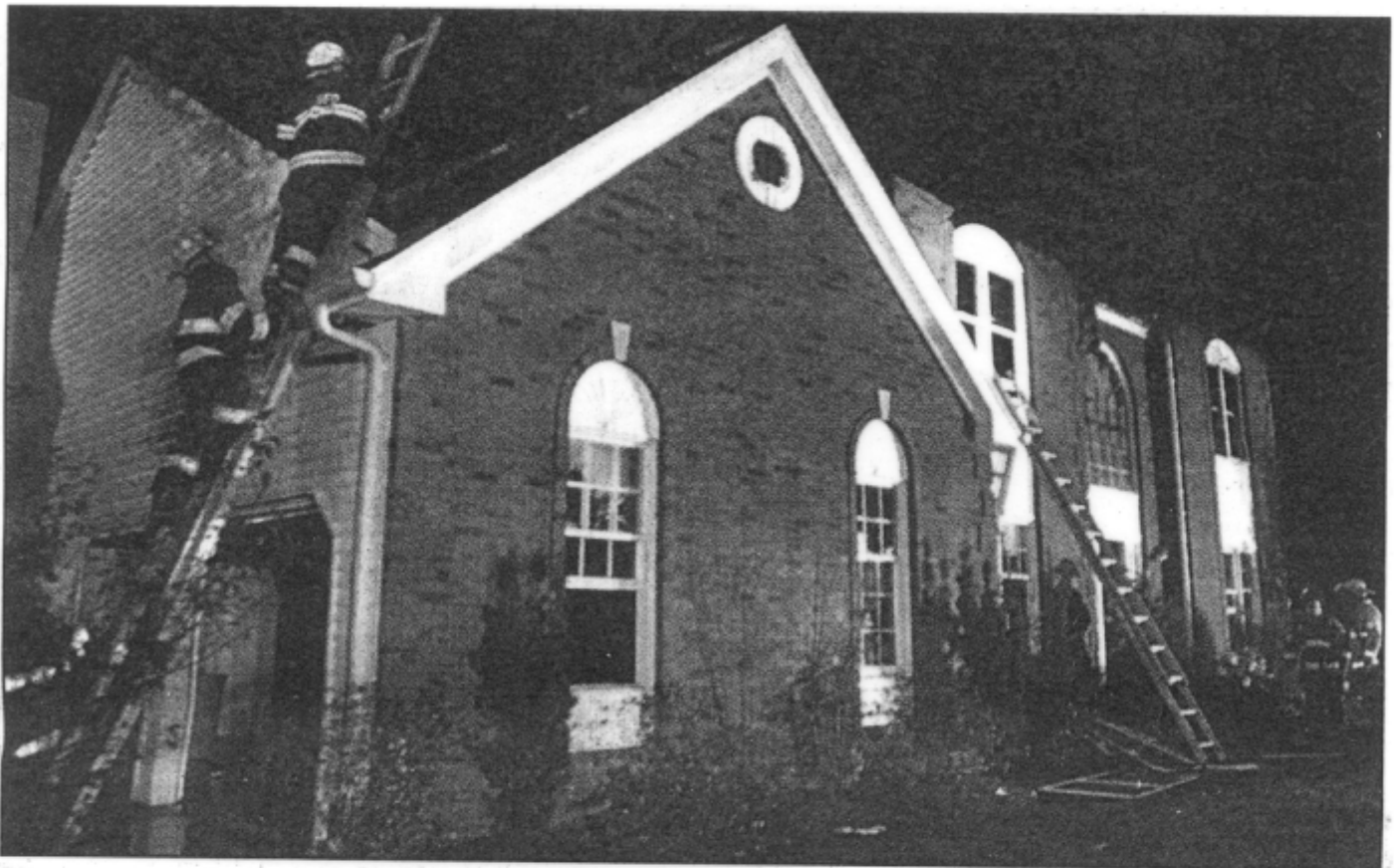
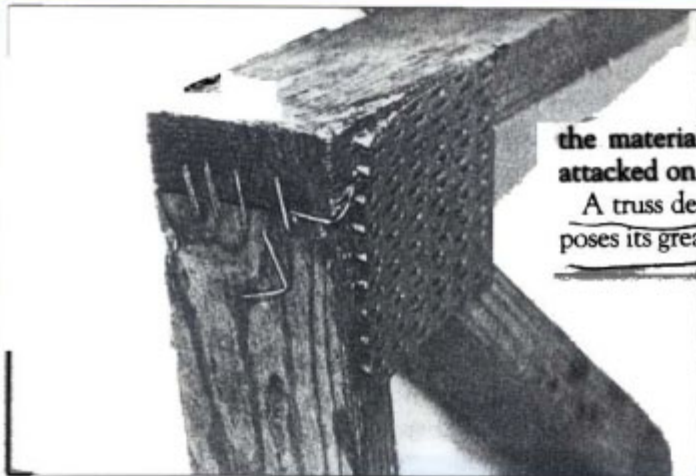


Photo by MARK IDE/WORCESTER TELEGRAM & GAZETTE

Firefighters work to put out the blaze that destroyed this home in Shrewsbury, Mass., while its owners were out visiting relatives on Diwali. The family had only been living in the home for a month after moving from Pittsburgh.

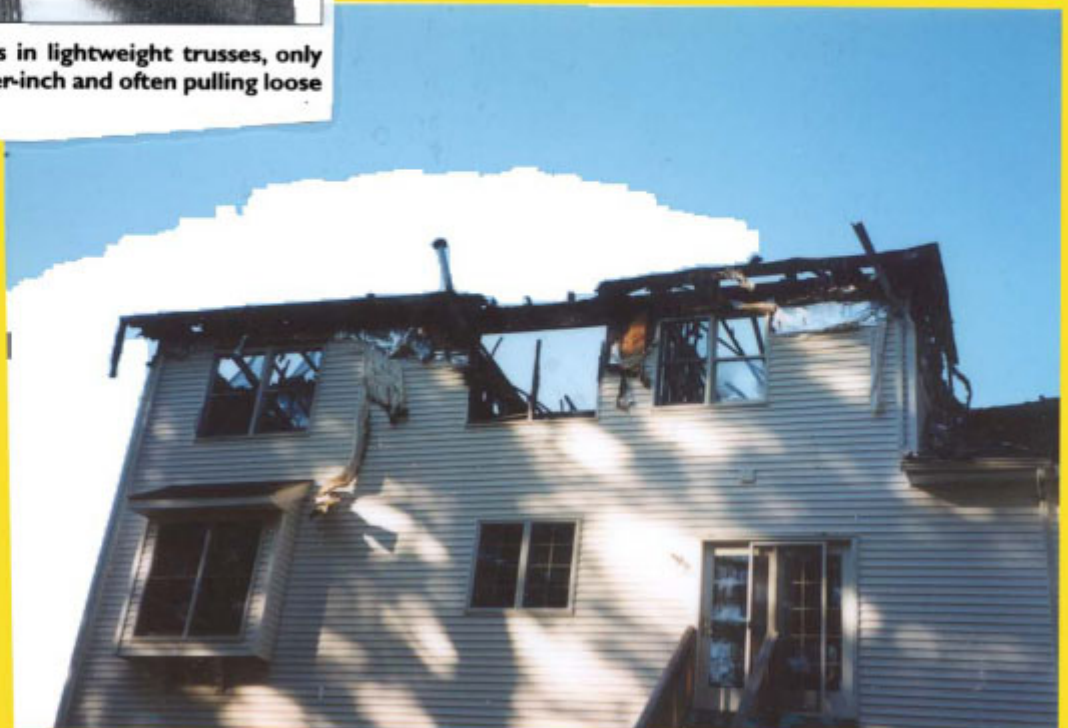




Gusset plates are the weak links in lightweight trusses, only penetrating the wood by a quarter-inch and often pulling loose prior to installation.

These connectors can conduct heat to the inside of the material, hastening its destruction at the same time that it is being attacked on its exterior. If the connection fails, the truss may fail.

A truss depends on every one of its pieces to hold it together. This is what poses its greatest danger to firefighters. The destruction of any one of its members, or the failure of its connectors, may cause the entire truss to collapse. Like a chain, it is only as strong as its weakest link.





## WARNING

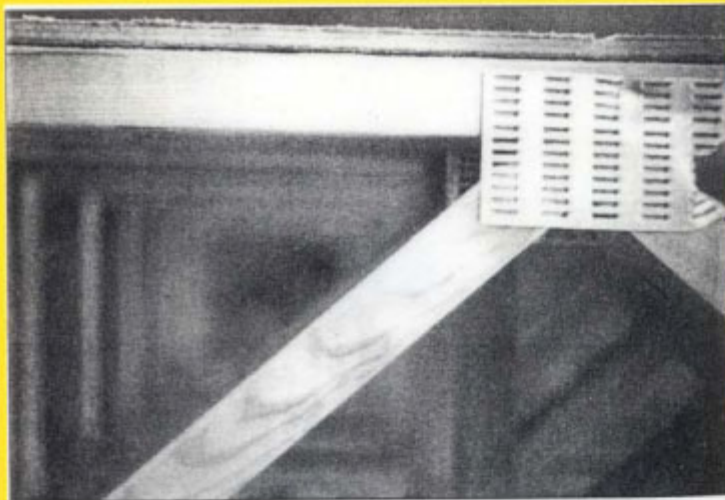
Many firefighters have lost their lives when a trussed roof has failed. A good rule to follow is that when a significant amount of fire exists in the truss area of a roof structure, firefighters should not be on or under a truss roof.

PEAK  
STILL  
INTACT





PEAK  
COLLAPSED



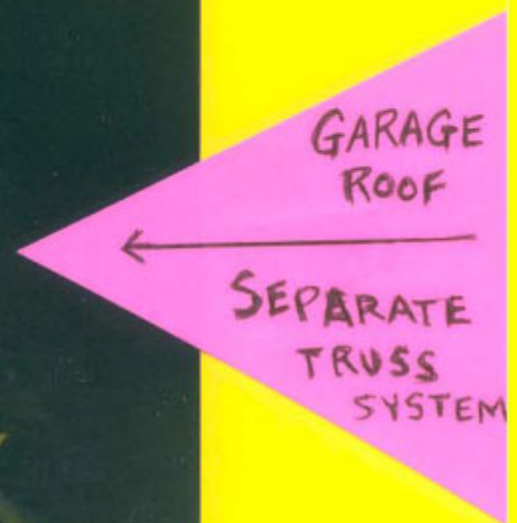
Flat 2 × 4 trusses covered with plywood can easily be severed by power saws.



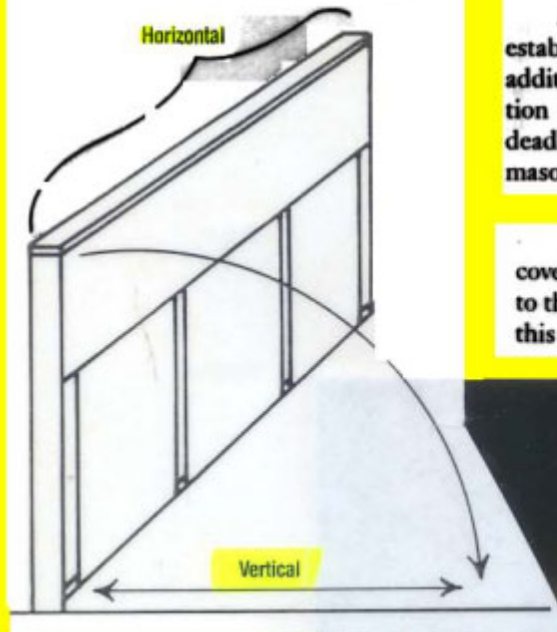
VOID  
SPACE



Flat 2 × 4 trusses create a cockloft (more accurately, a trussloft) on each floor.



#### Zones of Danger: Collapse Danger Zones



**ZONE OF DANGER:** Two types of hazardous areas, defined as follows.

*Horizontal Collapse Zone:* The horizontal measurement of the wall. When establishing a collapse zone, firefighters should estimate this measurement in addition to the outward area that the wall may cover if it falls. A miscalculation of the potential horizontal length of a wall collapse could be just as deadly as a miscalculation of the outward area a falling wall will cover with masonry.

*Vertical Collapse Zone:* The expected ground area that a falling wall will cover when it collapses. It is generally that distance away from the wall equal to the height of the wall. In some instances, heavy stones will fall farther than this distance.







WALL  
SEPARATION

#### Reasons for Collapse Increase

Structural collapse during firefighting can be expected to increase. Three factors, age of buildings, abandonment, and lightweight construction materials, will increase the number of burning building collapses.

Today's firefighters, who have gained their knowledge of fire behavior from standard roof and floor systems, must be aware that the time frames and danger signs to which they are accustomed are no longer reliable. No longer will they have ten to twenty minutes in which to search, rescue, and attack before they notice the floor or roof sagging. Many of the new systems fail in under ten minutes, dropping their entire load, often without any noticeable sag prior to snapping.

The firefighters of tomorrow are going to be paying with their lives for the practices of today's construction industry. Every effort must be made to identify those buildings where lightweight wood trusses are in use and to create or modify tactics to ensure safe operations at those buildings.



The belief that brick walls crumble as they fall is a myth.